

In the Claims

This listing of claims will replace all prior versions and listings of claims in this application.

1 - 14 (Cancelled).

15 (Currently amended). A process for identifying an antagonist of the bitter taste receptor activity of the polypeptide encoded by a polynucleotide selected from the group consisting of:

- (a) a polynucleotide encoding at least a mature form of a polypeptide having the deduced amino acid sequence as shown in SEQ ID NO: 1;
- (b) a polynucleotide having the coding sequence, as shown in SEQ ID NO: 2 encoding at least a mature form of the polypeptide having the deduced amino acid sequence as shown in SEQ ID NO:1;
- (c) a polynucleotide encoding a derivative of a polypeptide encoded by a polynucleotide of any one of (a) to (b), wherein in said derivative one to twenty amino acid residues are conservatively substituted compared to said polypeptide, and said derivative has bitter taste receptor activity when contacted with an agonist selected from the group consisting of acetylthiourea, N,N-dimethylthioformamide, N,N'-diphenylthiourea, N-ethylthiourea, 2-imidazolidinethione, 4(6)-methyl-2-thiouracil, N-methylthiourea, phenylthiocarbamide, 6-phenyl-2-thiouracil, 6-propyl-2-thiouracil, tetramethylthiourea, thioacetamide, thioacetanilide, 2-thiobarbituric acid and 2-thiouracil;
- (d) a polynucleotide which is at least 85% identical to a polynucleotide as defined in any one of (a) to (c) and which encodes a polypeptide having bitter taste receptor activity when contacted with an agonist selected from the group consisting of acetylthiourea, N,N-dimethylthioformamide, N,N'-diphenylthiourea, N-ethylthiourea, 2-imidazolidinethione, 4(6)-methyl-2-thiouracil, N-methylthiourea, phenylthiocarbamide, 6-phenyl-2-thiouracil, 6-propyl-2-thiouracil, tetramethylthiourea, thioacetamide, thioacetanilide, 2-thiobarbituric acid and 2-thiouracil; and
- (e) a polynucleotide the complementary strand of which hybridizes under high stringency

hybridization conditions to a polynucleotide as defined in any one of (a) to (d) and which encodes a polypeptide having bitter taste receptor activity when contacted with an agonist selected from the group consisting of acetylthiourea, N,N-dimethylthioformamide, N,N'-diphenylthiourea, N-ethylthiourea, 2-imidazolidinethione, 4(6)-methyl-2-thiouracil, N-methylthiourea, ~~phenylthiocarbamide~~, 6-phenyl-2-thiouracil, 6-propyl-2-thiouracil, tetramethylthiourea, thioacetamide, thioacetanilide, 2-thiobarbituric acid and 2-thiouracil; wherein said process comprises the steps of:

- (1) contacting said polypeptide, or a host cell genetically engineered with said polynucleotide or with a vector containing said polynucleotide, with an agonist of bitter taste receptor activity selected from the group consisting of acetylthiourea, N,N-dimethylthioformamide, N,N'-diphenylthiourea, N-ethylthiourea, 2-imidazolidinethione, 4(6)-methyl-2-thiouracil, N-methylthiourea, ~~phenylthiocarbamide~~, 6-phenyl-2-thiouracil, 6-propyl-2-thiouracil, tetramethylthiourea, thioacetamide, thioacetanilide, 2-thiobarbituric acid, 2-thiouracil and functional derivatives thereof;
- (2) contacting said polypeptide, or a host cell genetically engineered with said polynucleotide or with a vector containing said polynucleotide, with a potential antagonist; and
- (3) determining whether the potential antagonist antagonizes the bitter taste receptor activity of said polypeptide.

16 (Previously presented). The process of claim 15 wherein steps (1) and (2) are carried out concomitantly.

17 (Previously presented). The process of claim 15 wherein step (2) is carried out prior to step (1).

18 (Cancelled).

19 (Previously presented). A process selected from the group consisting of:

A. a process for the production of a food or any precursor material or additive employed in the production of foodstuffs comprising the steps of:

- (1) identifying an antagonist according to the process of claim 15; and
- (2) admixing the identified antagonist with a foodstuff precursor material or additive employed in the production of foodstuffs; and

B. a process for the production of a nutraceutical or pharmaceutical composition comprising the steps of;

- (1) identifying an antagonist according to the process of claim 15; and
- (2) formulating the identified antagonist with an active agent in a pharmaceutically acceptable form.

20- 24 (Cancelled).